CLAIMS

Claims:

1. (**Previously Presented**) A method comprising assigning within a modulator of a transmitter, redundant symbols, each such redundant symbol representing the same data bits of a message in the same way and modulating the redundant symbols onto a plurality of carriers to create a non-uniform repetition pattern that distributes the data bits across carriers in a pseudorandom pattern that insures non-periodicity in the location of carriers modulated by the same data bit wherein frequency intervals between carriers assigned to a data bit are different for each interval and wherein the method creates frequency diversity in a multicarrier OFDM signal to overcome impairment caused by periodic nulls in a multipath channel.

2. (**Previously Presented**) A method comprising the steps of:

selecting a data bit from a message;

selecting a symbol to represent the selected data bit;

redundantly assigning within a modulator of a transmitter, the symbol to a plurality of carriers comprising the steps of:

assigning the symbol to a first carrier;

assigning the symbol to a second carrier with a first carrier spacing from the first carrier;

assigning the symbol to a third carrier with a second carrier spacing from the second carrier that is different from the first carrier spacing; and

repeating the steps of selecting data bits and selecting a symbol to represent the data bits and redundantly assigning the symbol to carriers;

wherein the assignment of symbols to carriers produces a non-uniform repetition pattern that distributes the data bits across carriers in a pseudorandom pattern that insures non-periodicity in the location of carriers modulated by the same data bit.

3. (**Previously Presented**) The method of claim 2 wherein each carrier spacing for each symbol is different from every other carrier spacing for the symbol.

4. (**Previously Presented**) The method of claim 3 wherein the ratio of carriers to symbols is 16.

5. (**Canceled**)

6. (**Previously Presented**) A method of transmitting symbols, the method comprising the steps of:

determining a number of data bits represented by one symbol;

selecting from the message a number of data bits equal to the number of bits represented by the one symbol; and

assigning in a modulator, a portion of the one symbol, the portion representing at least one data bit, to a first plurality of carriers and redundantly assigning the same portion of the one symbol to at least a second unique plurality of carriers in a repetition pattern that distributes the at least one data bit across carriers in a pseudorandom pattern, wherein the frequency separation of the first plurality of carriers and the second plurality of carriers is non-uniformly distributed to insure non-periodicity in the location of carriers modulated by the one data bit over a set of available frequencies upon which the first and second plurality of carriers are transmitted.

7. (**Canceled**)

8. (**Canceled**)

9. (**Previously Presented**) An OFDM modulator for transmitting a binary data word in a symbol having frequency diversity comprising:

a ramp counter for producing a series of bin number values;

a look up table for mapping the bin number values to bit select values, the look up table comprising entries that produce an assignment of bits to carriers, the assignment resulting in bits being repeated over a selection of carriers that have a non-uniform, pseudorandom pattern for distribution over a set of available frequencies upon which the carriers are transmitted.

10. (**Canceled**)

11. (**Previously Presented**) The method of claim 2 wherein some carriers are zeroed to avoid interference resulting from the transmitted signal.

12. (**Previously Presented**) The method of claim 6 wherein some carriers are zeroed to avoid interference resulting from the transmitted signal.

13. (**Previously Presented**) The OFDM modulator of claim 9 further comprising means for disabling I and Q carrier amplitudes for a particular carrier and zeroing the transmitted energy for that carrier.